

REMARKS

The claims appearing in this application were 1 through 9 and 11. Claim 1 has been amended to further define Applicants' invention, Claim 2 has been cancelled without prejudice and Claims 3 and 7 have been amended to be dependent from Claim 1. Therefore, the claims remaining in this application and under consideration are 1, 3 through 9 and 11.

All of the claims have been rejected under 35 U.S.C. 103(a). Claim 1 was so rejected as being unpatentable over Chiu, et al, U.S. 6,326,882 in view of Japanese document 56,030,673A and further in view of Chang, et al., U.S. 5,175,453, Claims 2 through 6 were rejected over the above three references and further in view of Yokomori, et al., U.S. 4,280,063 in addition to official notice taken by the Examiner of the fact that a field effect transistor is a commonly used device for switching loads in or out of the circuit. Claims 7, 8, 9 and 11 were rejected as were Claims 2 through 6 (without the official notice) but further in view of Seener, et al., U.S. 6,125,642. Applicants respectfully traverse each of the foregoing rejections and respectfully request reconsideration of Claims 1, 3 through 9 and 11 in view of the amendments to Claim 1 and the following remarks.

APPLICANT'S INVENTION

Applicants' invention as defined in amended Claim 1 is a load activation and variable grace period timing system for use with an exhaust fan which includes a monitor which detects when a lamp switch is activated to supply electrical power to the exhaust fan and provides an output signal at a first level representative of the fact that the lamp switch has been activated. Applicants' system includes a timer comprising an analog oscillator which includes means for varying the frequency of the oscillator, with the frequency changes determining the variable grace period and a counter which receives the output signal of the analog oscillator. The output

signal of the monitor is applied to the timer to activate the analog oscillator but to disable the counter so long as the first level output signal is applied. The counter is enabled when the lamp switch is deactivated and the monitor output signal level changes to a second level so that the counter counts the analog oscillator output pulses for a predetermined preset but variable time. A power switch is used for applying electrical power to the load including the exhaust fan when the monitor output signal is at the first level and continues to apply power until the counter reaches the predetermined count at which time power is removed from the load including the exhaust fan.

THE REJECTION

Claim 1 was rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu, in view of the Japanese document, and further in view of Chang. The Examiner has characterized Chiu as disclosing a load activation and a grace period timing system comprising:

“A monitor (controller 73 light switch) for detecting when a lamp switch is activated and providing an output signal at a first level representative thereof;

A timer receiving said output signal for providing a predetermined amount of time to run the fan after the light switch is turned off and provides periodical cycling of the load (fan) when light is off (abstract).

A power switch for applying electrical power to said load when said monitor output signal is at said first level and continuing until said timer reaches said predetermined time period.”

Applicants respectfully submit that the Examiner has mischaracterized Chiu in that Chiu does not disclose a timer which receives the output signal from the controller 73 to provide a predetermined amount of time to run the fan after the light switch is turned off. The amount of time during which the fan continues to run after the light switch is turned off is determined by the monostable multivibrator 26 which through the utilization of the short and long time delay 211, 212 is controlled so that the output signal thereof has two different lengths of time (one minute short delay, five minutes long delay). See Chiu, column 3, lines 28-31. The output of the monostable multivibrator 26 is applied as one input to the AND gate 210. The other input to the AND gate 210 comes from the sleep timer circuit 4 which has two different time limits (12 hour short sleep timer or 24 hours long sleep timer), column 3, lines 31-34. Thus, as long as the output of the monostable multivibrator 26 and the output of the sleep timer circuit are both applied as input signals to the AND gate 210, the fan will continued to operate. When the state of the monostable multivibrator changes, then the output signal appearing on line J of Figure 5 goes to a low or zero state and no output signal passes through the AND gate 210 thus causing the fan to turn off. Thus, if the short delay is in effect, then the fan will shut off after one minute, whereas, if the long delay is in effect, the fan will shut off after five minutes. No timer of any sort is involved in the Chiu circuit other than the preset period of time as above described.

Applicants note also that Examiner refers to the "periodical cycling of the load (fan) when light is off (abstract) with regard to the teachings of Chiu." Applicants are mystified as to why such a reference is being made since Applicants' device as disclosed in their specification does not contain such periodical cycling and such is clearly not claimed in any of the claims.

Applicants hereby incorporate by reference the discussion of the Chiu reference contained on pages 6 and 7 of the Amendment filed March 29, 2004.

In addition, Examiner states on page 3 of the Office Action that

“Chiu does not disclose a timer comprising a pulse generator and a counter, said counter receiving the output of said pulse generator, said timer receiving said output signal of said monitor to activate said pulse generator but to disable said counter so long as said first level output signal is applied, said counter being enabled when said lamp switch is deactivated and said monitor output signal level changes to a second level so that said counter count, said pulse generator output for a predetermined preset but variable time.”

Examiner then references Japanese Document 56,030,673A to supply “a pulse counting timing circuit comprising: a pulse generator and counter wherein said counter being enabled through a counter inhibit input terminal” and then notes that the Japanese document does not disclose a programmable counter. Applicants do recognize that the Japanese document in Figure 2 does disclose a pulse generator 3 which has its output connected to an AND gate 5 the output of which is connected to a counter 10. A square wave generator 4 which produces a low frequency square wave is connected as an additional input to the AND gate 5. The time limit of the timer is changed depending on the duty ratio of the square wave generator 4. Thus, the counter will count when the square wave is applied to the AND gate 5. The “constitution” of the Japanese document states “A counter with an inhibit input terminal may replace a “and” circuit 5 and the counter 10.” It is thus evident that Figure 3 is such an embodiment, that is, the counter 11 counts the output pulses of the pulse generator 3 during the time that the output of the square wave generator 4 is applied to the counter. When not applied, the counter is inhibited from counting. Applicants question how the Japanese document renders obvious Applicants’ timing system wherein the output signal of the claimed monitor is applied to activate the pulse generator

but to disable the counter so long as the first level output signal is applied but the counter being enabled when the lamp switch is deactivated and the second monitor output signal level changes to a second level so that the counter counts the pulse generator output. Applicants submit that the Japanese document 56,030,673A does not disclose such a structure.

Examiner then uses the Chang reference and states that it discloses "a configurable pulse generator especially for implementing signal delays wherein a fixed frequency oscillator drives a counter to determine, by reaching a pre-determined, usually manually-selected count, a time interval for an output pulse (Col. 2, lines 61-67)." Applicants respectfully submit that Chang discloses a pulse generator circuit which provides a pulse on line 24 generated by the edge detector 12 sensing application of a trigger signal to the terminal 20. The duration of the pulse on the line 24 is then determined by the programmable counter 16 counting the clock pulses from the oscillator 14 which was activated by an output signal from the edge detector 12 on the line 22. When the counter reaches a pre-determined count, it then generates a reset signal which returns the programmable counter 16 to zero and terminates the pulse signal on the line 24. See Col. 4, lines 12-47.

How would one incorporate the circuit of the Japanese document into Chang and the combination of those two into Chiu to provide an operating system as claimed by Applicants?

Examiner merely states that it would have been obvious to one having ordinary skill in the art to modify Chiu by replacing the timer with a timer comprising a pulse generator and a counter and enabling the counter with a counter inhibit signal input. Examiner states "the motivation would be to provide a programmable fan function to set the fan time grace period depending on the size or volume of the enclosed room."

Applicants respectfully submit that under the provisions of 35 U.S.C. Section 103(a) that the claimed invention must be considered as a whole and it must be determined that the differences between the subject matter sought to be patented and the prior art would have been obvious at the time the invention was made to a person having ordinary skill in the art. Examiner has dissected Applicants' claim and then sought a series of references which independently disclose elements of Applicants' invention and then combined those elements as taught by Applicants. Such, it is respectfully submitted, is improper. As the Federal Circuit stated in Ruiz v. A. B. Chance Co., 357 F.3d 1270 (Fed. Cir. 2004) in making the assessment of differences between the prior art and the claimed subject matter Section 103 specifically requires consideration of the claimed invention as a whole. Inventions typically are new combinations of existing principles or features and virtually all inventions are combinations of old elements. Such is the case in the present invention. The "as a whole" instruction in Section 103(a) prevents evaluation of the invention part by part. Without this important requirement an obviousness assessment might successfully break an invention into its component parts, then find a prior art reference corresponding to each component. This line of reasoning would import hindsight into the obviousness determination by using the invention as a roadmap to find its prior art components. Further, this improper method would discount the value of combining various existing features or principles in a new way to achieve a new result, often the essence of the invention.

Contrary to this reasoning, Section 103 requires assessment of the invention as a whole. This "as a whole" assessment of the invention requires a showing that an artisan of ordinary skill in the art at the time of invention confronted by the same problems as the inventor and with no knowledge of the claimed invention would have selected the various elements from the prior art

and combined them in the claimed manner. Section 103 requires some suggestion or motivation in the prior art to make the new combination. In In re Rouffert, 149 F.3d 1350 (Fed. Cir. 1998), the Court of Appeals for the Federal Circuit has expressed skepticism about invoking the knowledge of a skilled artisan to supply the required suggestion or motivation to combine on a scanty record. In re Lee, 277 F.3d 1338 (Fed. Cir. 2002) stating that "this factual question of motivation . . . could not be resolved on subjective belief and unknown authority."

Numerous decisions emphasize that such a combination of reference teachings is improper unless the prior art suggests such a combination. In In re Bond, 910 Fed.2d 831 (Fed. Cir. 1990) it was stated "the PTO erred in rejecting the claimed invention as an obvious combination of the teachings of two prior art references where the prior art provided no teaching, suggestion or incentive supporting the combination." In In re Paulsen, 30 Fed.3d 1475 (Fed. Cir. 1994) the Federal Circuit stated "in reviewing the Board's obviousness conclusions, we have been guided by the well-established principles that the claimed invention must be considered as a whole, multiple cited prior art references must suggest a desirability of being combined, and the references must be viewed without the benefit of hindsight afforded by the disclosure." In Ex Parte Dussaud, 7 USPQ 2d 1818 (Board of Patent Appeals and Interference since 1988), the Board stated "the mere fact that the prior art could be modified in the manner proposed by the Examiner would not have made the modification obvious unless the prior art suggested the desirability of the modification." It was further stated by the Board of Patent Appeals and Interferences in Ex Parte Clapp, 227 USPQ 972 (1985) "to support the conclusion that the claimed combination is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed combination or the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in